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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/828,484 | 04/19/2004 | John Y. Chai | 10677-010-999 | 4406 |
| 20583 | 7590 | 11/02/2005 | EXAMINER | |
| JONES DAY 222 EAST 41ST ST NEW YORK, NY 10017 | | | FRANK, RODNEY T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2856 | |

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/828,484 | CHAI ET AL. | |
| | Examiner | Art Unit | |
| | Rodney T. Frank | 2856 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 45-82 and 84-90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 45,46,53,54,56-58,60-63,74,76-79,82,84 and 87-89 is/are rejected.
- 7) ☒ Claim(s) 47-52,55,59,64-73,75,80,81,85,86 and 90 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 45, 46, 54, 56-58, 60-62, 74, 77-79, 87, and 89 are rejected under 35 U.S.C. 102(e) as being anticipated by Eguchi et al. (U.S. Patent Application Publication Number 2005/0022595A1; hereinafter referred to as Eguchi.) Eguchi discloses a liquid-amount detecting apparatus detects the amount of a liquid in containers. The liquid-amount detecting apparatus includes a liquid detecting circuit and a determining unit. The liquid detecting circuit includes electrode units disposed so as to be in contact with the liquid in the containers, which becomes electrically conductive when in contact with the liquid, an impedance, and an AC-signal source. An AC signal not containing a DC component is input from the AC-signal source to the electrode units through the source impedance, and a signal representing the status of electric connection of the electrode units is output. Furthermore, based on the output signal, a binary signal representing the presence or absence of electrical connection of the electrode units is output. The determining unit determines the presence or absence of the liquid at the electrode units

based on the binary signal output from the liquid detecting circuit (Please see the abstract).

3. In regard to claim 45, Eguchi discloses and illustrates in figure 4 a water level monitoring system for determining an amount of water added to and/or consumed from a filtered water container comprising a detection sensor (10) comprising an electrode pair (26), the electrode pair comprising a first electrode (26a-d) and a second electrode (26e) spaced sufficiently apart from each other so that an electrical property associated with the first and second electrodes that changes with changes in a water level in said filtered water container (T1) can be detected; a detection circuit (20) connected to the electrode pair in the detection sensor and capable of generating signals based on the electrical property associated with the electrode pair; and a control unit (30) connected to the detection circuit and capable of receiving signals from the detection circuit, wherein the control unit determines changes in the water level in said filtered water container from the signals received from the detection circuit and thereby determines said amount of filtered water added to and/or consumed from said filtered water container.

In regard to claims 46, 57, 61, 84, and 89, the use of an impedance (capacitance) is disclosed in paragraph [0063], and the potential difference (voltage across) between electrodes is also disclosed in paragraph [0064].

In regard to claims 54 and 74, a remaining amount indication unit (40) is in electrical communication with the control unit, causing the remaining amount indication unit to display information derived from changes in water level.

In regard to claim 56, paragraph [0068] discloses four pairs of electrodes and how they are related, how the different electrode pairs relate to the detection circuit, thus each pair interacting with a switching arrangement with the detection circuit, thus performing as a “multiple” detection circuit arrangement, and a control unit interacting with at least one detection circuit.

In regard to claims 58 and 77, the control unit determines changes in water level based upon the electrical properties associated with at least two pairs.

In regard to claim 60, Eguchi discloses and illustrates in figure 4 a water level monitoring system for determining an amount of water added to and/or consumed from a filtered water container comprising a detection sensor (10) comprising a plurality of electrode pairs (26), each pair in the plurality of pairs comprising a first electrode (26a-d) and a second electrode (26e) spaced sufficiently apart from each other so that an electrical property associated with the first and second electrodes that changes with changes in a water level in said filtered water container (T1) can be detected; a detection circuit (20) connected to the plurality of electrode pairs in the detection sensor and capable of generating signals based on the respective electrical properties associated with the first and second electrode pair of the plurality of electrode pairs; and a control unit (30) connected to the detection circuit and capable of receiving signals from the detection circuit, wherein the control unit determines changes in the water level in said filtered water container from the signals received from the detection circuit and thereby determines said amount of filtered water added to and/or consumed from said filtered water container.

In regard to claim 62, there are between 2 and 10 electrode pairs, as shown in figure 4.

In regard to claim 78, wherein a single common electrode (26e) represent a first electrode in each electrode pair in the plurality of electrode pairs.

In regard to claim 79, each second electrode in all or a portion of the plurality of electrode pairs has a unique length as shown in figure 4.

In regard to claims 82 and 87, the method of utilizing the apparatus as disclosed in claims 45 and 60, is disclosed in view of the fact that the apparatus is disclosed, as discussed in detail above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 63, 76, 82, 84, and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eguchi et al.

6. With regard to claim 63, though the number of electrodes is not specifically disclosed to use more than 10 electrode pairs, however, as paragraph [0068] discloses the embodiment in figure 4 utilizes four pairs of electrodes, however, more electrodes could be utilized, as the motivation would be that more electrodes would provide for a more sensitive sensor as the device is disclosed to use electrode pairs along the length of the sensor to determine the level of liquid.

With regard to claim 76, though the reference does not specifically disclose the use of multiple sensors, since the device utilizes a switching arrangement in order to access the various electrode pairs, the number of pairs is irrelevant to the operation of the device, and therefore the use of multiple electrode pair substrates in the system would be able to be utilized, as the device would be capable of supporting such an arrangement.

With regard to claims 82 and 88, the method claim is disclosed except that there is no disclosure that the consumption of water is obtained. However, since the device is able to determine the level of water, and there is a means of determining an amount remaining, then the amount remaining is in relation to the amount you started with, and thus the amount remaining also gives an indication of an amount consumed, compared to the full amount. Thus the changes in liquid level can indicate a consumption amount as well.

With regard to claim 84, the use of an impedance (capacitance) is disclosed in paragraph [0063], and the potential difference (voltage across) between electrodes is also disclosed in paragraph [0064].

7. Claims 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eguchi et al. as applied to claim 45 above, and further in view of Kahana (U.S. Patent Number 5,637,214). Kahana discloses a filter assembly adapted to be used in a water treatment apparatus for removing impurities from tap water provided to residential users, having a filter housing with an opening formed therein, a filter bag composed of a porous material disposed in the filter housing, filter media contained in the filter bag, and

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a lid adapted to cover the opening of the filter housing. The filter housing has an upper end and a lower end each having a plurality of apertures formed therein. The filter media contained in the filter bag is composed of individual particles having a mean diameter large enough to prevent the particles from passing through the porous material of the filter bag. The apertures formed in the lower end of the filter housing may comprise elongate slots, and the mean diameter of the individual particles of the filter media may be less than the width of the elongate slots formed in the lower end of the filter housing. The lower end of the filter housing may comprise an annular portion and a central portion which extends upwardly from the annular portion, and the upwardly extending central portion may maintain the filter bag out of contact with the annular portion so as to form an annular chamber substantially unobstructed by the filter bag (Please see the abstract). The device disclosed in Kahana discloses the water filter container fitted with a hopper to hold the unfiltered water and a replaceable filter cartridge so that draining filters the water. The motivation to combine the two references is actually found in the Eguchi reference since Eguchi is very broad in his definition of a container, and thus any container, even the container of Kahana, would work in the scope of the invention.

Allowable Subject Matter

8. Claims 47-52, 55, 59, 64-73, 75, 80, 81, 85, 86, and 90 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: Claims 47-51, 55, and 67, are allowable since there is no disclosure for such a circuit to indicate a state of functionality or non-functionality of a container.

Claims 59, 85, and 90 are allowable since there is no disclosure to a circuit indicating the status of a water filter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney T. Frank whose telephone number is (571) 272-2193. The examiner can normally be reached on M-F 9-5:30 p.m. EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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RTF
October 28, 2005


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